

Work Order ID 100534

100534

Page 1

April-22-13 1:44:03 PM

Item ID: D4148-3

Accept

N900040100

Setup Start *NS1*

Revision ID:

Stop *NS2*

Item Name: Stud Receiver, Lower

Start Date: 4/22/13 Start Qty: 20.00

20

Cust Item ID:

Required Date: 5/03/13 Req'd Qty: 20.00

20

Customer:

Reference:

Approvals: Process Plan: MLJ Date: 13-04-25

Tooling: Date:

Run Start *NR1*

QC: Date:

SPC (Y/N): Date:

Stop *NR2*

| Sequence ID/ Work Center ID | Operation Description | Set Up/ Run Hours | Tool ID | Tool # | Plan Code | Accept Qty | Reject Qty | Reject Number | Insp. Stamp |
|--------------------------------|--------------------------|----------------------|---------|--------|--------------|---------------|---------------|------------------|----------------|
|--------------------------------|--------------------------|----------------------|---------|--------|--------------|---------------|---------------|------------------|----------------|

Draw Nbr

Revision Nbr

D4148

d

100

Cut blanks as per folio

0.00

100

Bandsaw

Memo

0.00

Jeaspa Bandsaw

5.350" LONG

DAJ
02
89 ET 13-04-27 (x20)

110

0.00

110

HAAS 1

Memo

0.00

HAAS CNC vertical machine #1

MACHINE AS PER FOLI FA944 AND DWG

FOLIO REV: AA

DWG REV: d

DEBURR

DAJ
02
89 ET 13-04-28 (x20)

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

DQA: _____ Date: _____

QA Closed: _____ Date: _____

| | | | | | | | | | | | | | | | | | | |
|--|---|--|--------------------------------------|------------------------------------|------------------------------------|--------------------------------------|------------------------------------|------------------------------------|--|----------------------------------|--|------------------------------------|--|--------------------------------|------------------------------------|------------------------------------|-----------------------------------|--|
| Work Order: _____ Part No. _____ NCR No. _____ | DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/> | AGAINST DEPARTMENT/PROCESS <table style="width:100%;"> <tr> <td>Skid-tube <input type="checkbox"/></td> <td>Crosstube <input type="checkbox"/></td> <td>Water Jet <input type="checkbox"/></td> <td>Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table> | Skid-tube <input type="checkbox"/> | Crosstube <input type="checkbox"/> | Water Jet <input type="checkbox"/> | Engineering <input type="checkbox"/> | Machining <input type="checkbox"/> | Small Fab <input type="checkbox"/> | Prod. Eng. Coord. <input type="checkbox"/> | Quality <input type="checkbox"/> | Thermoforming <input type="checkbox"/> | Finishing <input type="checkbox"/> | Rec/Store/Packaging <input type="checkbox"/> | Other <input type="checkbox"/> | Large Fab <input type="checkbox"/> | Composite <input type="checkbox"/> | Supplier <input type="checkbox"/> | |
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| Large Fab <input type="checkbox"/> | Composite <input type="checkbox"/> | Supplier <input type="checkbox"/> | | | | | | | | | | | | | | | | |

| Root Cause | Date | Step | Qty | Description of work order update or Non-conformance | Initial Chief Eng | Action Description | Sign & Date | Verification | QC Inspector |
|---------------|------|------|-----|---|-------------------|--------------------|-------------|--------------|--------------|
| Doc/Data | | | | | | | | | |
| Equip/Tooling | | | | | | | | | |
| Operator | | | | | | | | | |
| Material | | | | | | | | | |
| Setup | | | | | | | | | |
| Other | | | | | | | | | |
| Process | | | | | | | | | |
| Supplier | | | | | | | | | |
| Training | | | | | | | | | |
| Unapproved | | | | | | | | | |

FAULT CATEGORY

| Landing Gear | General | Other |
|---|---|--|
| <input type="checkbox"/> Bending | <input type="checkbox"/> Bend | <input type="checkbox"/> Grain |
| <input type="checkbox"/> Centre Not Concentric to O/S | <input type="checkbox"/> BOM/Route | <input type="checkbox"/> Hardware |
| <input type="checkbox"/> Cracks | <input type="checkbox"/> Broken/Damaged | <input type="checkbox"/> Inspection Incomplete |
| <input type="checkbox"/> Crushed/Crimped | <input type="checkbox"/> Burrs | <input type="checkbox"/> Instructions Incomplete/Unclear |
| <input type="checkbox"/> Cuffs | <input type="checkbox"/> Contamination | <input type="checkbox"/> Maintenance |
| <input type="checkbox"/> Heat Treat | <input type="checkbox"/> Countersink | <input type="checkbox"/> Mislabeled |
| <input type="checkbox"/> Inspection Strip in Tube | <input type="checkbox"/> Cut Too Short | <input type="checkbox"/> Misread |
| <input type="checkbox"/> Ripples in Bend | <input type="checkbox"/> Drill Holes | <input type="checkbox"/> Offset |
| <input type="checkbox"/> Torque Waves in Extrusion | <input type="checkbox"/> Drawing | <input type="checkbox"/> Out of Calibration |
| <input type="checkbox"/> Turning Sequence | <input type="checkbox"/> Finish | <input type="checkbox"/> Out of Sequence |
| <input type="checkbox"/> Wave/Twist in Tube | <input type="checkbox"/> Folio | <input type="checkbox"/> Outside Dimensions |
| | | <input type="checkbox"/> Ovalized |
| | | <input type="checkbox"/> Over/Under tolerance |
| | | <input type="checkbox"/> Part Incorrect |
| | | <input type="checkbox"/> Part Lost/Missing |
| | | <input type="checkbox"/> Part Moved |
| | | <input type="checkbox"/> Positioned Wrong |
| | | <input type="checkbox"/> Power Loss/Surge |
| | | <input type="checkbox"/> Pressure/Forced |
| | | <input type="checkbox"/> Temperature/Cure |
| | | <input type="checkbox"/> Weld |
| | | <input type="checkbox"/> Wrong Stock Pulled |
| | | <input type="checkbox"/> Other |

Work Order ID 100534

100534

Page 2

April-22-13 1:44:03 PM

Item ID: D4148-3 Accept *N900040100* Setup Start *NS1*
 Revision ID: Stop *NS2*
 Item Name: Stud Receiver, Lower
 Start Date: 4/22/13 Start Qty: 20.00 *20* Cust Item ID:
 Required Date: 5/03/13 Req'd Qty: 20.00 *20* Customer:
 Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start *NR1*
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop *NR2*

| Sequence ID/ Work Center ID | Operation Description | Set Up/ Run Hours | Tool ID | Tool # | Plan Code | Accept Qty | Reject Qty | Reject Number | Insp. Stamp |
|--------------------------------|---|----------------------|---------|--------|--------------|---------------|---------------|------------------|----------------|
| 120 | QC2- Inspect parts off machine FAI/FAIB | 0.00 | | | | | | | |
| *120* | | | | | | | | | |
| QC | Memo | 0.00 | | | | | | | |
| Quality Control | | | | | | | | | |
| 130 | QC8- Inspect parts - second check | 0.00 | | | | | | | |
| *130* | | | | | | | | | |
| QC | Memo | 0.00 | | | | | | | |
| Quality Control | | | | | | | | | |
| 170 | Identify as per dwg & Stock Location: 145 | 0.00 | | | | | | | |
| *170* | | | | | | | | | |
| Packaging | Memo | 0.00 | | | | | | | |
| Packaging | | | | | | | | | |

25 13-04-28 (x20)

13/04/30

20 0 DAS 08 9-89

20x 13-5-7

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

DQA: _____ Date: _____

QA Closed: _____ Date: _____

| | | | | | | | | | | | | | | | | | | |
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| Root Cause | Date | Step | Qty | Description of work order update or Non-conformance | Initial Chief Eng | Action Description | Sign & Date | Verification | QC Inspector |
|---------------|------|------|-----|---|-------------------|--------------------|-------------|--------------|--------------|
| Doc/Data | | | | | | | | | |
| Equip/Tooling | | | | | | | | | |
| Operator | | | | | | | | | |
| Material | | | | | | | | | |
| Setup | | | | | | | | | |
| Other | | | | | | | | | |
| Process | | | | | | | | | |
| Supplier | | | | | | | | | |
| Training | | | | | | | | | |
| Unapproved | | | | | | | | | |

FAULT CATEGORY

| Landing Gear | General | Other |
|---|---|--|
| <input type="checkbox"/> Bending | <input type="checkbox"/> Bend | <input type="checkbox"/> Grain |
| <input type="checkbox"/> Centre Not Concentric to O/S | <input type="checkbox"/> BOM/Route | <input type="checkbox"/> Hardware |
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| | | <input type="checkbox"/> Positioned Wrong |
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| | | <input type="checkbox"/> Temperature/Cure |
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Work Order ID 100534

100534

Page 3

April-22-13 1:44:03 PM

Item ID: D4148-3 Accept *N900040100* Setup Start *NS1*
 Revision ID: Stop *NS2*
 Item Name: Stud Receiver, Lower
 Start Date: 4/22/13 Start Qty: 20.00 *20* Cust Item ID:
 Required Date: 5/03/13 Req'd Qty: 20.00 *20* Customer:
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Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start *NR1*
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop *NR2*

| Sequence ID/ Work Center ID | Operation Description | Set Up/ Run Hours | Tool ID | Tool # | Plan Code | Accept Qty | Reject Qty | Reject Number | Insp. Stamp |
|--------------------------------|---|----------------------|---------|--------|--------------|---------------|---------------|------------------|----------------|
| 180 | QC21- Final Inspection - Work Order Release | 0.00 | | | | | | | |
| *180* | | | | | | | | | |
| QC | Memo | 0.00 | | | | | | | |
| Quality Control | | | | | | | | | |

13/5/8
 113-05-7

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

DQA: _____ Date: _____

QA Closed: _____ Date: _____

| | | | | | | | | | | | | | | | | | | |
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| Root Cause | Date | Step | Qty | Description of work order update or Non-conformance | Initial Chief Eng | Action Description | Sign & Date | Verification | QC Inspector |
|---------------|------|------|-----|---|-------------------|--------------------|-------------|--------------|--------------|
| Doc/Data | | | | | | | | | |
| Equip/Tooling | | | | | | | | | |
| Operator | | | | | | | | | |
| Material | | | | | | | | | |
| Setup | | | | | | | | | |
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| Supplier | | | | | | | | | |
| Training | | | | | | | | | |
| Unapproved | | | | | | | | | |

FAULT CATEGORY

| Landing Gear | General | Other |
|---|---|--|
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| | | <input type="checkbox"/> Power Loss/Surge |
| | | <input type="checkbox"/> Pressure/Forced |
| | | <input type="checkbox"/> Temperature/Cure |
| | | <input type="checkbox"/> Weld |
| | | <input type="checkbox"/> Wrong Stock Pulled |
| | | <input type="checkbox"/> Other |

Picklist Print

April-22-13 1:44:02 PM

Page 1

Work Order ID: 100534

Parent Item: D4148-3

Start Date: 4/22/13

Required Date: 5/03/13

Parent Item Name: Stud Receiver, Lower

Start Qty: 20.00

Required Qty: 20.00

Comments: IPP REV:A NEW ISSUE 10-06-24 JLM VERIFIED BY:DD IPP REV:B 11.03.02 AS PER
DWG REV.D DD VERF:EC

| Component Item ID/ Item Name | Replacement Item ID | Mfg/ Purch | Bin Item | Primary Location | Last Location | Route Seq ID | Unit of Measure | Qty on Hand | Qty per Kit | Total Qty | Qty Issued | Date Issued | Status |
|--------------------------------------|------------------------|---------------|-------------|---------------------|------------------|-----------------|--------------------|----------------|-------------|--------------|---------------|----------------|--------|
| M303B1.000X03.000 303 BAR 1" X 3' | | Purchased | No | | | 100 | f | 25.5700 | 0.48 | 9.6 | | | |

Location

Loc Qty

Loc Code

MAT049

25.57

123954

12.17

124079

13.4

9.6

ET 13.04-27

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

DQA: _____ Date: _____

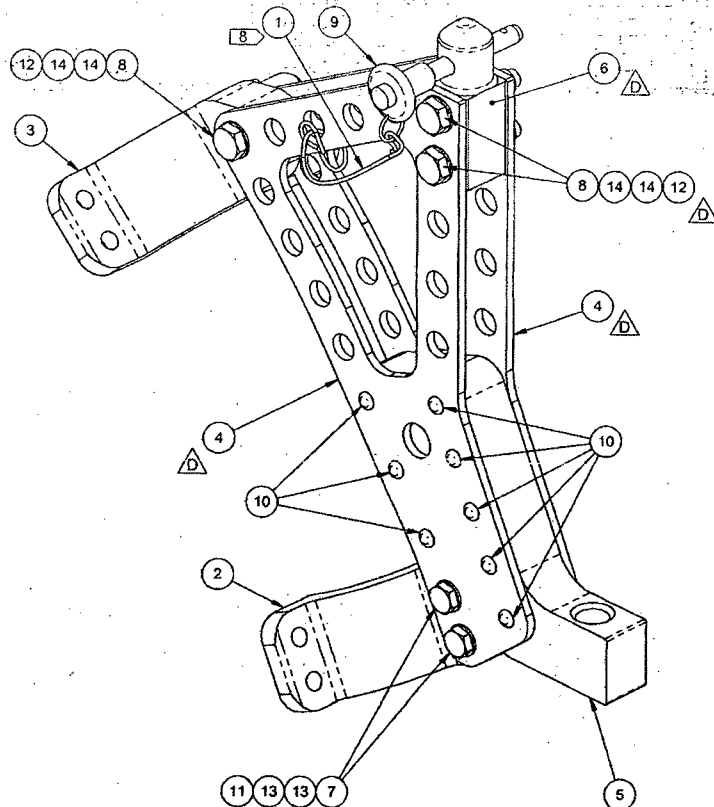
QA Closed: _____ Date: _____

| | | | | | | | | | | | | | | | | | | |
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| Root Cause | Date | Step | Qty | Description of work order update or Non-conformance | Initial Chief Eng | Action Description | Sign & Date | Verification | QC Inspector |
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| Supplier | | | | | | | | | |
| Training | | | | | | | | | |
| Unapproved | | | | | | | | | |

FAULT CATEGORY

| Landing Gear | General | Other |
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| | | <input type="checkbox"/> Power Loss/Surge |
| | | <input type="checkbox"/> Pressure/Forced |
| | | <input type="checkbox"/> Temperature/Cure |
| | | <input type="checkbox"/> Weld |
| | | <input type="checkbox"/> Wrong Stock Pulled |
| | | <input type="checkbox"/> Other |



D4148-041 FWD X-TUBE LUG ASSY

NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: N/A
- 6) IDENTIFICATION: IDENTIFY WITH DART P/N "D4148-041" PER DART QSI 044 6.1
- 7) WEIGHT: 3.67 lbs
- 8) ATTACH D2690-6 TO D4148-1 BY LOOPING AROUND A LIGHTENING HOLE FIRST AND THEN SECURE TO MS17984-C413

| ITEM | QTY | P/N | DESCRIPTION |
|------|-----|---------------|----------------------|
| | X | D4148-041 | FWD X-TUBE LUG ASSY |
| 1 | 1 | D2690-6 | LANYARD |
| 2 | 1 | D3910-1 | X-TUBE LUG |
| 3 | 1 | D4091-1 | MOUNTING LUG |
| 4 | 2 | D4148-1 | FWD X-TUBE LUG PLATE |
| 5 | 1 | D4148-3 | STUD RECEIVER LOWER |
| 6 | 1 | D4148-5 | EYEBOLT STUD |
| 7 | 2 | AN3C12A | BOLT |
| 8 | 3 | AN4C13A | BOLT |
| 9 | 1 | MS17984-C413 | PIP PIN |
| 10 | 8 | MS20615-4M18 | RIVET |
| 11 | 2 | MS21043C3 | NUT |
| 12 | 3 | MS21043C4 | NUT |
| 13 | 4 | NAS1149C0332R | WASHER |
| 14 | 6 | NAS1149C0432R | WASHER |

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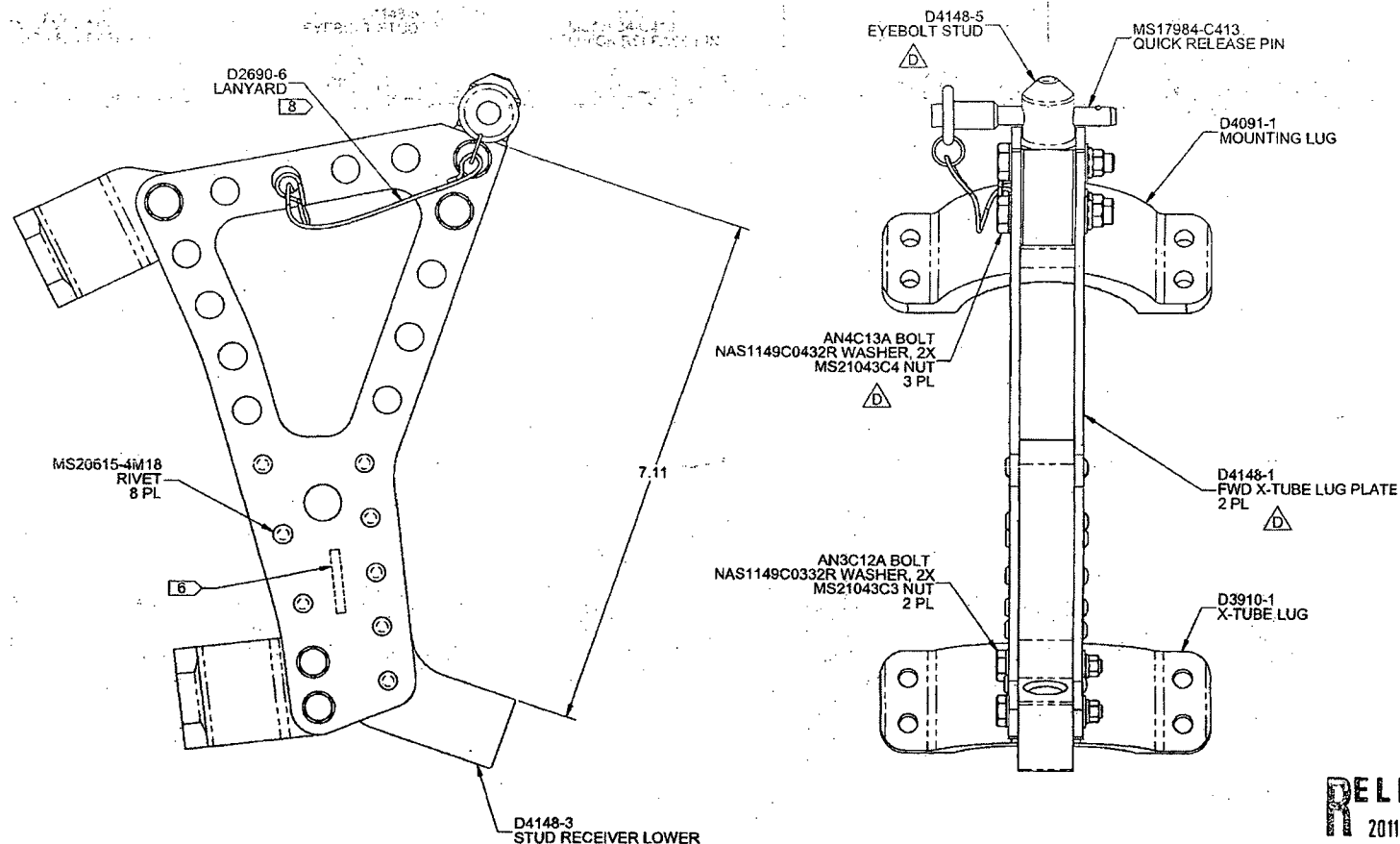
| D | HOLE DIA CHANGED TO 0.252" (D8-3); HOLE DIA CHANGED TO 0.250" (C8-5); REPLACED QTY(2) AN3C12A, MS21043C3 AND QTY(4) NAS1149C0332R WITH QTY(2) AN4C13A, MS21043C4 AND QTY(4) NAS1149C0432R (D3-1, C4-2) | SC | 11.02.22 |
|------------|---|----|----------|
| C | REDESIGNED D4148-1/-3 TO ADDRESS COMPATIBILITY ISSUES WITH D350-591 SHORT STEPS | MB | 10.10.12 |
| B | REPLACED QTY(3) MS20615-4M18 WITH QTY(2) EACH AN3C12A, MS21043-3 AND QTY(4) NAS1149C0332R WASHER (ZN D3-1, B7-2 & B4-2); MS20615-4M18 WAS MS20615-4M20 (ZN D3-1 & B7-2); Ø0.191 2 PL REPLACES Ø0.129 3 PL (ZN D6-3); Ø0.129 7 PL WAS 10 PL (ZN A7-3); Ø0.191 WAS Ø.129 (ZN C8-3); REASON: SEE TR-DSS0-007-2 REV. B. | MB | 10.07.05 |
| A | NEW ISSUE | MB | 10.06.18 |
| REV. | DESCRIPTION | BY | DATE |
| DESIGN | MB | | |
| DRAWN | SC | | |
| CHECKED | | | |
| MFG. APPR. | | | |
| APPROVED | | | |
| DE APPR. | | | |
| DATE | 11.02.22 | | |

DART AEROSPACE LTD
HAWKESBURY, ONTARIO, CANADA

DRAWING NO. **D4148** REV. D
SHEET 1 OF 5
TITLE **FWD X-TUBE LUG ASSY** SCALE NTS

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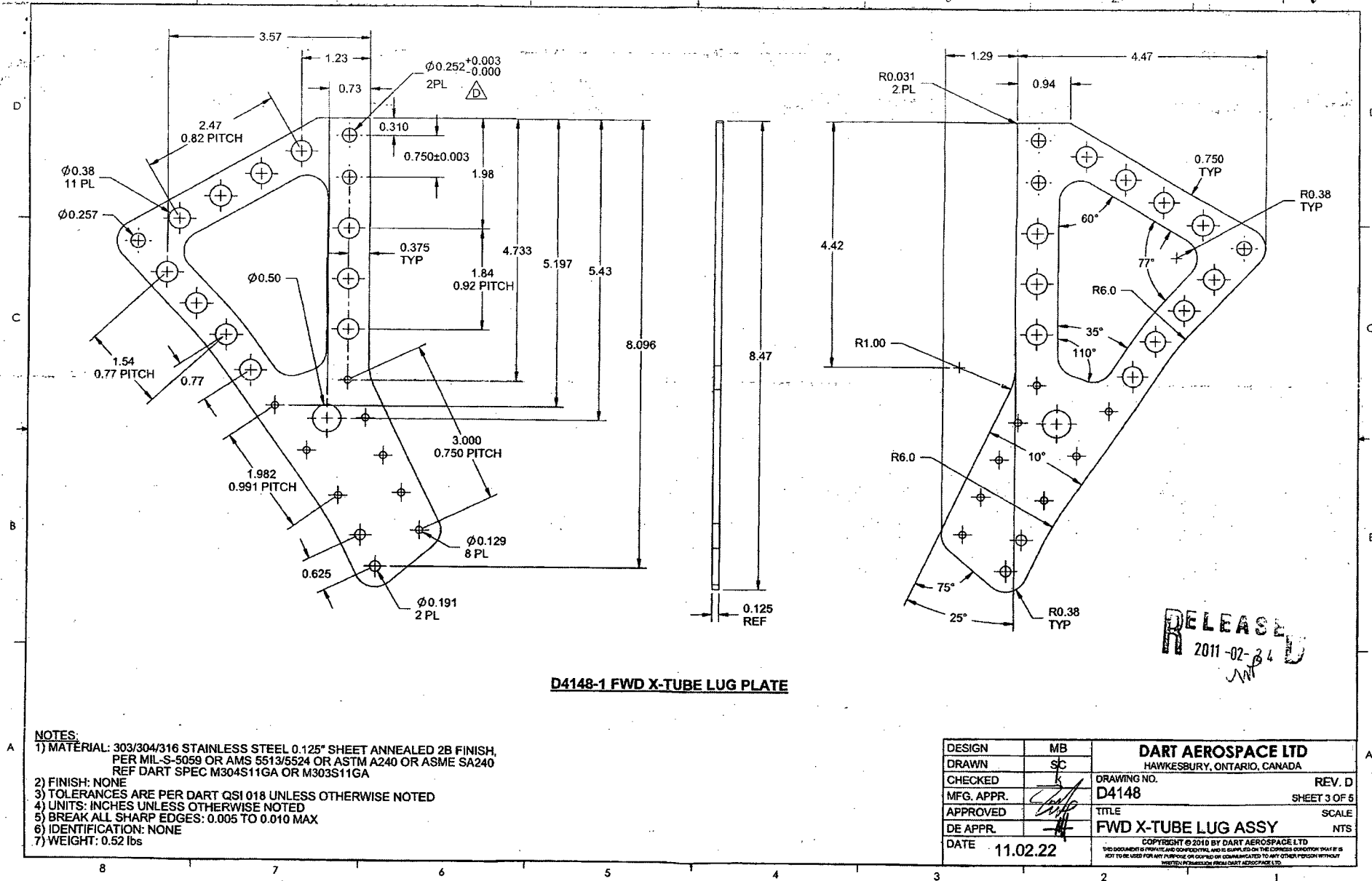


D4148-041 FWD X-TUBE LUG ASSY

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| | | | |
|------------|----------|---|--------------|
| DESIGN | MB | DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA | |
| DRAWN | SC | | |
| CHECKED | | DRAWING NO. D4148 | REV. D |
| MFG. APPR. | | TITLE | SHEET 2 OF 5 |
| APPROVED | | FWD X-TUBE LUG ASSY | SCALE |
| DE APPR. | | | NTS |
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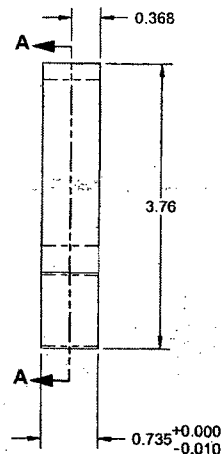
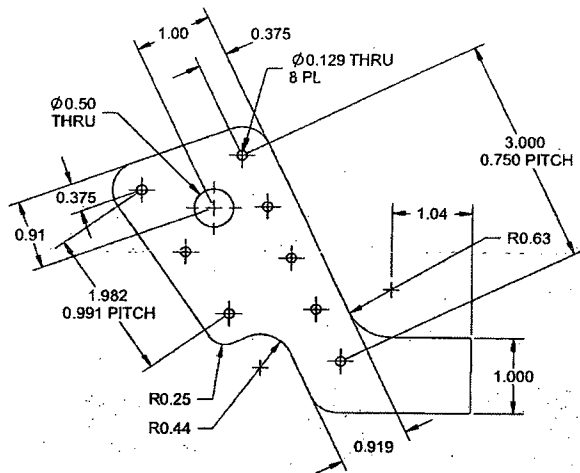
D4148-1 FWD X-TUBE LUG PLATE

NOTES:

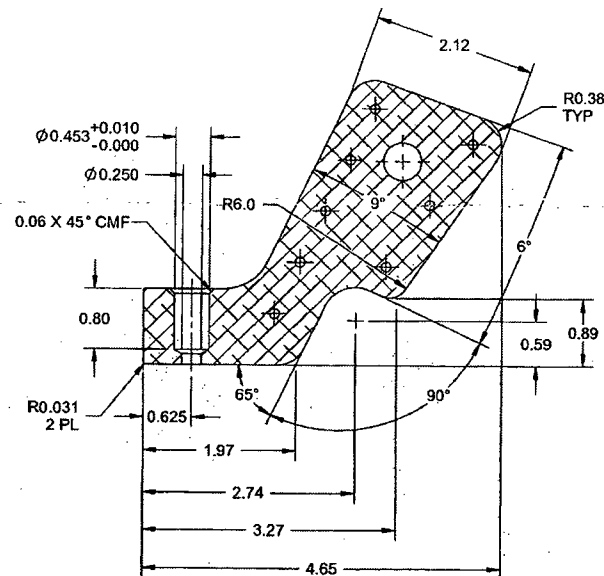
- 1) MATERIAL: 303/304/316 STAINLESS STEEL 0.125" SHEET ANNEALED 2B FINISH, PER MIL-S-5059 OR AMS 5513/5524 OR ASTM A240 OR ASME SA240 REF DART SPEC M304S11GA OR M303S11GA
- 2) FINISH: NONE
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK ALL SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: 0.52 lbs

| | | | |
|------------|--------------------|--|--------------|
| DESIGN | MB | DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA | |
| DRAWN | SC | | |
| CHECKED | K | DRAWING NO. | REV. D |
| MFG. APPR. | <i>[Signature]</i> | D4148 | SHEET 3 OF 6 |
| APPROVED | <i>[Signature]</i> | TITLE | SCALE |
| DE APPR. | <i>[Signature]</i> | FWD X-TUBE LUG ASSY | NTS |
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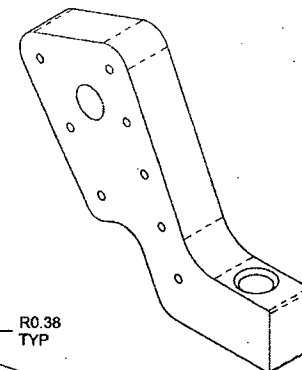
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D4148-3 STUD RECEIVER LOWER



SECTION A-A



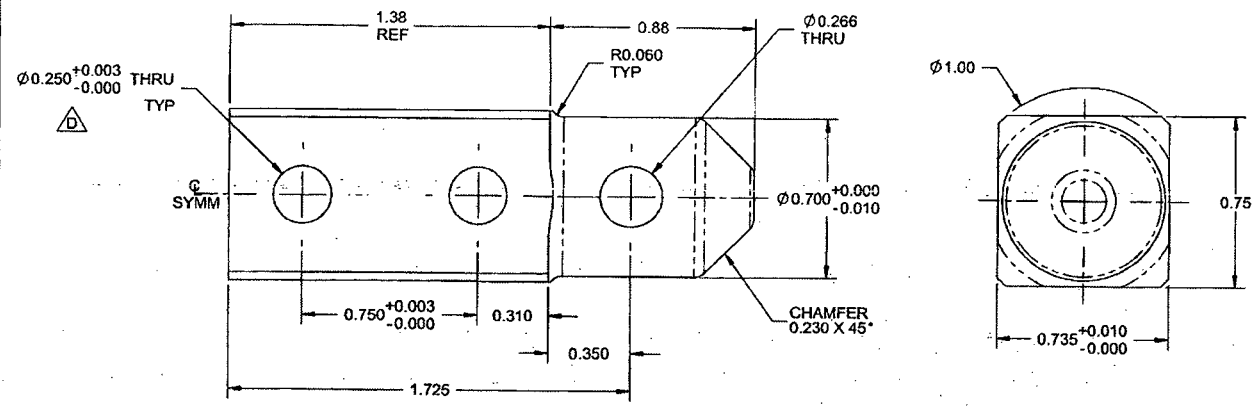
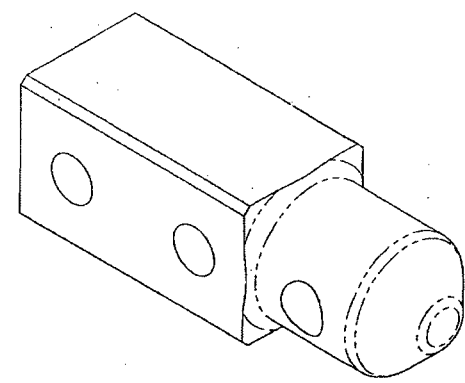
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2011-02-24

NOTES:

- 1) MATERIAL: 303/304/316 STAINLESS STEEL BAR PER ASTM A582 OR ASTM A276
REF DART SPEC M304B OR M303B
- 2) FINISH: NONE
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK ALL SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: 1.52 lbs

| | | | |
|------------|----------|--|--------------|
| DESIGN | MB | DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA | |
| DRAWN | SC | | |
| CHECKED | | DRAWING NO. | REV. D |
| MFG. APPR. | | D4148 | SHEET 4 OF 5 |
| APPROVED | | TITLE | SCALE |
| DE APPR. | | FWD X-TUBE LUG ASSY | NTS |
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D4148-5 EYEBOLT STUD

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NOTES:

- 1) MATERIAL: 303/304/316 STAINLESS STEEL BAR PER ASTM A582 OR ASTM A276
REF DART SPEC M304B OR M303B
- 2) FINISH: NONE
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK ALL SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: 0.27 lbs

| | | | |
|------------|----------|--|--------------|
| DESIGN | MB | DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA | |
| DRAWN | SC | | |
| CHECKED | | DRAWING NO. | REV. D |
| MFG. APPR. | | D4148 | SHEET 5 OF 5 |
| APPROVED | | TITLE | SCALE |
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